

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 June 2001 (07.06.2001)

PCT

(10) International Publication Number
WO 01/040944 A3

(51) International Patent Classification⁷: G06F 11/14

(21) International Application Number: PCT/US00/42325

(22) International Filing Date:
29 November 2000 (29.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/168,048 30 November 1999 (30.11.1999) US
09/713,108 15 November 2000 (15.11.2000) US

(71) Applicant: MICROSOFT CORPORATION [US/US];
One Microsoft Way, Redmond, WA 98052 (US).

(72) Inventors: RAGHAVAN, Kartik, N.; 745 Summit Avenue East, Apartment 401, Seattle, WA 98102 (US). WAITE, Ryan, W., J.; 5722 43rd Avenue NE, Seattle, WA 98105 (US). PHILLIPS, Thomas, G.; 13328 NE 55th Place, Bellevue, WA 98005 (US). SUTTON, Paul, C.; 15226 NE 13th Place, Apartment 2504, Bellevue, WA 98007 (US).

(74) Agents: CONKLIN, John, B. et al.; Leydig, Voit & Mayer, Ltd., Two Prudential Plaza, Suite 4900, 180 North Stetson, Chicago, IL 60601-6780 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

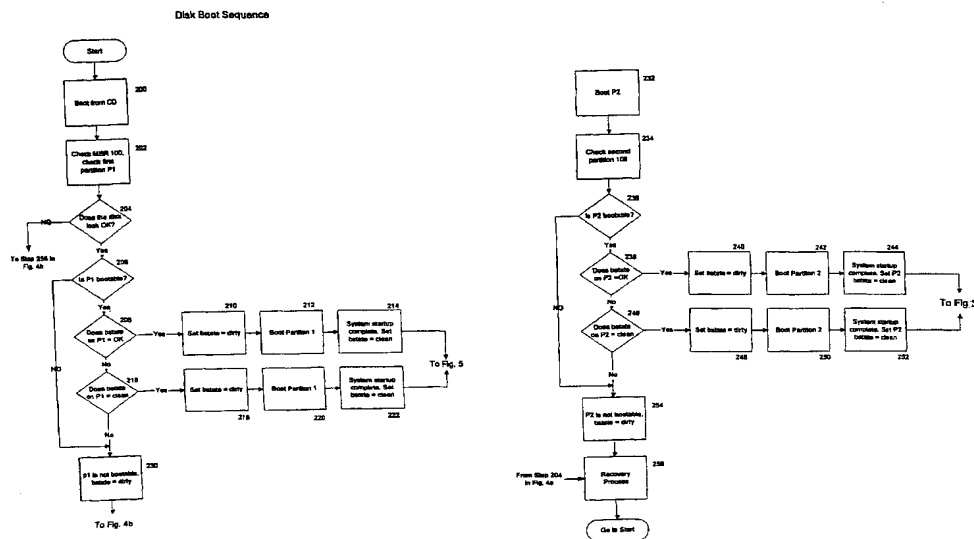
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

(88) Date of publication of the international search report:
11 July 2002

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR RECOVERY INFRASTRUCTURE FOR COMPUTER SYSTEMS



(57) Abstract: A method and system for booting a computer system to a known state at system start-up or in the event of an error or failure while the system is running or operating. The method and system of the invention automatically executes all the necessary procedures to boot the computer system to a known state, without any human intervention. The invention uses information about the state of the computer system during previous boot attempts to determine the logical steps performed to ensure that the system boots to a known state.

WO 01/040944 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/42325

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F11/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|--|
| X | EP 0 917 060 A (IOMEGA CORP) 19 May 1999 (1999-05-19) | 45,46,50 |
| Y | abstract | 1-3, 8-13, 17-21, 23,26, 27, 29-34, 39-42, 51,53-57 |
| A | column 3, line 29 -column 4, line 8 column 4, line 22 - line 47 column 8, line 42 - line 47 column 10, line 48 -column 11, line 34 column 12, line 48 -column 14, line 8 column 15, line 5 - line 30 column 15, line 44 -column 16, line 26 --- -/-- | 14,28, 43,52 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

7 August 2001

Date of mailing of the international search report

19 Dec 2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Leuridan, K

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/42325

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|--|
| Y | WO 95 22794 A (APPLE COMPUTER ;YEN JOHN (US)) 24 August 1995 (1995-08-24) | 1-3, 8-13, 17-21, 23,26, 27, 29-34, 39-42, 51,53-57 |
| A | abstract page 6, line 11 -page 11, line 18 page 12, line 7 -page 13, line 22 figures 1,2,8 | 15,16,44 |
| X | --- US 5 708 776 A (KIKINIS DAN) 13 January 1998 (1998-01-13) | 1,3,17, 29,30, 33,45 |
| A | the whole document | 2,9,10, 12,13, 31,32, 34,40, 42,51,53 |
| A | --- US 5 432 927 A (GROTE JACK A ET AL) 11 July 1995 (1995-07-11) the whole document | 1-58 |
| A | --- US 5 802 363 A (DART II CHARLES R ET AL) 1 September 1998 (1998-09-01) abstract column 5, line 52 -column 6, line 53 ----- | 4-7,22, 24,25, 35-38, 47-49,58 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/42325

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-58

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-58

Method for a computer system to boot itself to known state in the event of a failure.

2. Claims: 59-62

Method to modify the system image with automatic restoration of the old configuration in case of problems.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/42325

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|----------------------------|---------------------|
| EP 0917060 A | 19-05-1999 | US 6170055 B | 02-01-2001 |
| | | AU 1368499 A | 24-05-1999 |
| | | FR 2772947 A | 25-06-1999 |
| | | GB 2332076 A | 09-06-1999 |
| | | TW 421739 B | 11-02-2001 |
| | | WO 9923561 A | 14-05-1999 |
| | | US 6317845 B | 13-11-2001 |
| ----- | ----- | ----- | ----- |
| WO 9522794 A | 24-08-1995 | AU 1876895 A | 04-09-1995 |
| ----- | ----- | ----- | ----- |
| US 5708776 A | 13-01-1998 | NONE | |
| ----- | ----- | ----- | ----- |
| US 5432927 A | 11-07-1995 | NONE | |
| ----- | ----- | ----- | ----- |
| US 5802363 A | 01-09-1998 | NONE | |
| ----- | ----- | ----- | ----- |